

Vibha Jha Ph.D.

Phone: 6099374598, Email: vibhajha76@gmail.com

“Innovate and implement ideas to ensure continuous progress”

Employment

Research Associate..... March 2020 - Current
ClinImmune Cell and Gene Therapy, School of Medicine, University of Colorado; Supervisor – Christina Roark, Ph.D. and Brian Freed, Ph.D.

- HLA-Class II, DRB1 alleles are associated with both susceptibility and resistance to Rheumatoid Arthritis (RA). We have designed transgenic mice that express edited DRB1 allele associated with resistance to RA. Purpose of my current project is to determine the efficacy and safety of this edited DRB1 allele in humanized transgenic mice. Successful outcomes from these experiments will be used to apply CRISPR technology to edit HLA-DRB1 gene in stem cells from people suffering with RA.
- Trained summer students to perform cloning and peptide binding assay.

Postdoctoral Fellow..... July 2017- March 2020
Infectious Diseases, School of Medicine, University of Colorado; Supervisor - Edward Janoff, MD

- I characterized phenotypic and functional outcomes of T and B cell interactions in response to polysaccharide vaccines (with and without protein conjugates) against pneumonia in people living with HIV. I supervised study coordinators to complete subject enrollments and data compilation.
- Trained summer students and junior research assistants with flow cytometry techniques.

Adjunct Faculty.....January 2016 - May 2016 and January 2017- August 2017, Colorado Community Colleges, Biological Sciences

- Designed syllabus and managed discussion forums, lab exams, case studies and other assignments for two sections each of online and in person classes of Microbiology

Postdoctoral Fellow.....June 2012 - June 2014
School of Veterinary Medicine, University of Pennsylvania; Supervisor - Michael Atchison, Ph.D.

- Designed and maintained IgkAIDyy1f/f mice to study role of transcription factor YY1 in antibody diversity and class switch recombination. Revamped TAT/CRE treatment protocols to detect somatic hypermutations in primary B cells
- Created γ CREyy1f/f mice to study YY1-mediated regulation of antigen-dependent development of germinal centers.

Postdoctoral Fellow.....Nov 2011 - June 2012
Obstetrics and Gynecology, School of Medicine, University of Pennsylvania; Supervisor – Sarah Adams, MD.

- Developed techniques for harvesting various peritoneal murine tissues to set up ex vivo cultures and designed flow cytometry panels to study role of tolerogenic CD103⁺ dendritic cells in murine model of ovarian carcinoma
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Technical Expertise

Immunology

- Development of flow cytometry panels to detect hematopoietic stem cells T cells
- Design MLR assays to detect activation and proliferation of allogenic T cells
- Performed Skin transplant surgeries in mice to determine allogeneic rejection
- Developed flow cytometry panels to determine functions of T follicular helper (TFH) cells in regulation of immunological responses to pneumococcal vaccine in HIV+ and control subjects
- Developed Assay to detect synapse formation between B cells and TFH cells from human PBMCs using Amnis image stream technology
- Standardization and implementation of multiplex ELISA to detect antigen specific antibodies and cytokines from mice and human serum
- Development of ELISPOT assays to detect antibodies and cytokines
- Design and application of flowcytometry panels to study functional and proliferation status of various lymphocyte subsets
- Development of coculture and other ex-vivo culture assays with B cell lines, purified B cells and T cells from mice and human tissues to study cellular interactions
- Application of immunohistological techniques and immunofluorescence to detect anti-nucleolar antibodies in serum and IgG deposits in tissue sections
- Breeding, genotyping, designing and managing various mouse models

Molecular Biology

- Cloning and expression of various DRB1 HLA alleles in T 2 cell lines
- Peptide binding assays with arthritogenic peptides and various DRB1 expressing T 2 cells lines
- Gene deletion using TAT-CRE system in murine splenic B cells
- Post-translational modification of genes in B cell lines using plasmid vectors
- Mammalian protein expression, purification and quantification from *E. coli*
- Large scale production, isolation and quantification of monoclonal antibodies using hybridoma cell lines, protein A columns and dialysis chambers
- Western blot assay to detect cytoplasmic and nuclear proteins
- Immunoprecipitation to study to interactions between transcription factors and their regulators
- Detection of site-specific mutations in DNA purified from primary B cell cultures using TATA cloning and PCR amplification

Publications

- **Vibha Jha**, Marilyne Coulombe, Edward F. Rosloniec, Jennifer Matsuda, Brian M. Freed and Christina L. Roark. Gene editing at position 71 in HLA DRB1*04:01 blocks collagen sensitization and avoids allorecognition. *Manuscript in preparation*.

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- **Vibha Jha**, Lindsay K. Nicholson, Edward M. Gardner, Jeremy T. Rahkola, Harsh Pratap and Edward Janoff. Impact of HIV infection and antigen class on T follicular helper cell responses to pneumococcal polysaccharide-protein conjugate vaccine in humans. *J. Immunology*, May 2021, 15: 206 (10)
 - **Vibha Jha** and Edward Janoff. Complementary role of CD4+ T cells in response to pneumococcal polysaccharide vaccine in humans. *Vaccines*, February 2019; 7(8)
 - Parul Mehra, Tatiana Gerasimova, Arindam Basu, **Vibha Jha**, Anupam Banerjee, Corbett Berry, Ranjan Sen and Michael L. Atchison. YY1 controls Eu-3'RR DNA loop formation and Ig heavy chain class switch recombination. *Blood Advances*, November 2016; 1(1): 15-20.
 - Dallas B. Files, Tomoe Higuchi, Jaryse C. Harris, **Vibha Jha**, Phyllis Gimotty, and Sarah F. Adams. Immune checkpoint blockade unmasks the stimulatory capacity of tumor-associated CD103+ dendritic cells in late-stage ovarian cancer. *Oncoimmunology*: May 2016; 5(8).
 - Anupam Banerjee, Vishal Sindhava, **Vibha Jha**, Suchita Hodewadekar and Atchison, Michael L. Atchison. YY1 is required for germinal center B cell development. *PLOS one*: May 2016; 8(1).
 - **Vibha Jha**, Creg J. Workman, Tracy L. McGaha, Liping Li, Jaya Vas, Dario A. Vignali, and Marc Monestier. LAG-3 (Lymphocyte Activation Gene-3) negatively regulates environmentally-induced autoimmune disease. *PLOS one*: August 14, 2014; 9(8).
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Honors and Awards

- National Institutes of Health Training Grant and Microbiology and Immunology Fellowship 2004-2008
 - Frank Baldino Jr. Travel Award (Temple University School of Medicine) April 2008
 - AAI (American Association of Immunologists) Trainee Abstract Award 2008
 - Excellent Research Abstract Award, Research Day Meeting, School of Medicine, University of Colorado, 2018
 - AAI Trainee Abstract Award 2019
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Education

Ph.D. Immunology.....Temple University, School of Medicine, Philadelphia, PA

Master of Science, Microbiology.....Institute of Science, University of Mumbai, India

Bachelor of Science, Microbiology..... Jai Hind College, University of Mumbai, India

Community outreach and leadership

- President, Association of International Researchers, 2019-2020
- Mentored 8th grade student, Community Resources, Denver Public Schools, Spring 2019
- Volunteer, Young Hands in Science, 2018-2020
- Departmental representative, Post Doc Association, 2018-2020